WELLINGTON GRAVE EXPLORER'S GUIDEBOOK

ISSUE #5
SCIENTISTS

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THE WELLINGTON GRAVE EXPLORER'S GUIDEBOOK IS YOUR COMPANION FOR EXPLORING KARORI CEMETERY AND LEARNING ABOUT SOME OF THE LOCAL PEOPLE BURIED THERE.

THIS EDITION TAKES YOU TO THE GRAVES OF SOME OF THE PEOPLE BURIED OR SCATTERED IN THE CEMETERY WHO'VE MADE A CONTRIBUTION TO SCIENCE THROUGHOUT THE LAST 150 YEARS OR SO OF AOTEAROA'S HISTORY.

I wanted to look at scientists for two reasons. The first is that I came across several scientists when I was looking for people for issues two and three, both of which were about public servants. There was a fair bit of crossover - most if not all the scientists were also public servants. So I had a hard time deciding who to include.

In the end I included a few scientists in issues two and three, but I focused on ones with a contribution to public services and public institutions - like people in public science leadership and administration roles.

This time I wanted to revisit those scientists, as well as others I didn't cover in those past issues, but focus more on the science work they did and the scientific knowledge they contributed. And as I went looking for other people I came across more people in science roles who could have just as easily fit into a tour of public servants.

The crossover between scientists and public servants was a reminder to me is that advances in science are often underpinned by governments seeing the value of the work and choosing to invest in it.

I think there is a common perception that science is mainly done by independently innovative and entrepreneurial people who get to where they are from pure hard work and genius. Or that science is the realm of business - from tech start-ups to big corporations. But in reality it often (mostly?) takes public institutions doing science for the public good to create the foundation for the advances and discoveries that drive society forward.

And that brings me to the second reason I wanted to focus on scientists this time round. Earlier this year as part of my day job I was fortunate enough to do some work with the Save Science Coalition. They're a group of science organisations focused on advocating for better public science investment and to stop the large-scale cuts currently being made to public science funding and jobs.

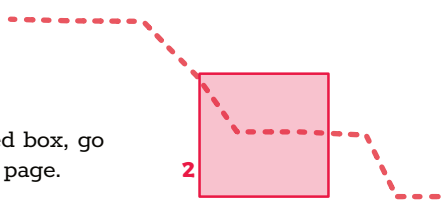
Hearing from scientists about the work they do reminded me how important it is that we value their expertise and their work. Because with all the challenges society has to make it through in the next few years - environmental and otherwise - I don't know how we'll survive without them.

HOW TO USE THIS GUIDEBOOK

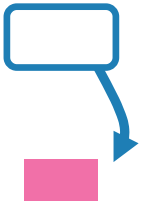
On the opposite page you'll find a map of the cemetery showing you the full tour route.

Follow the dotted line around the cemetery.

When you get to a red box, go to the corresponding page.



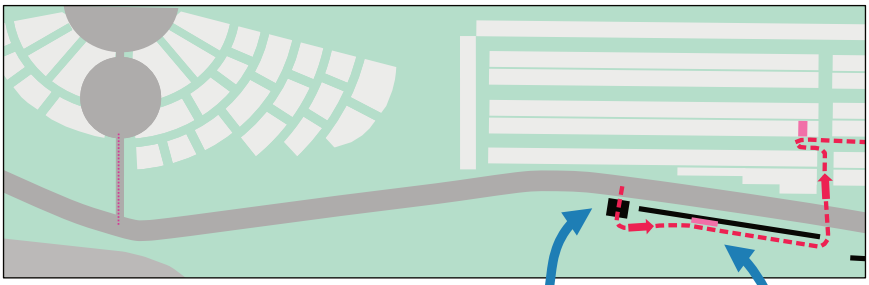
Follow the blue boxes for instructions about how to find the graves.



The graves themselves will be marked pink.

On the page you'll find some information about the person that the grave belongs to.

8
10
7
5
4
Start here, at the wall of niches along the road, not too far from the main entrance.
Finish here at the Seaforth Terrace entrance
KARORI CEMETERY



Go through the gate to that leads to the soldiers' lawn.

John's niche is in section 10, which is the second section from the gate.

(Each section is numbered at the top)

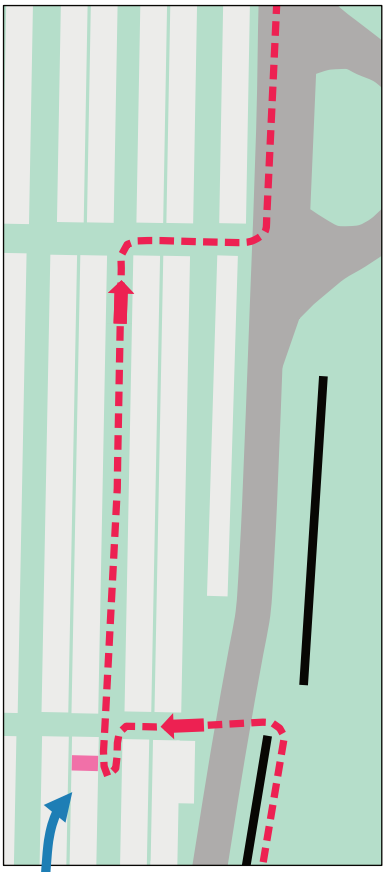
John's niche is 9 across from the left and 3 down.

DR JOHN HENDERSON

John was a mining geologist responsible for surveying much of Aotearoa's mineral and fossil fuel resources, as well as supporting the development of hydro-electricity infrastructure.

From around 1902 he was director of Reefton School of Mines, where he was responsible for investigating the geological structure of the coal and gold mines of Westland and West. Nelson.

As a mining geologist with the Department of Scientific and Industrial Research's geological survey from 1911 to 1928 he carried out regional surveys of the geology and mineral resources of several districts. He also carried out geological reports for many engineering projects, for example the Arapuni Hydro-electric Dam on the Waikato River. He later became the director of the Department of Scientific and Industrial Research's geological survey for about 17 years.



To get to Thomas's grave take the first left. His grave is the second grave on the right.

It's got a concrete border but it doesn't have a headstone, just a whole lot of plants growing in it.

THOMAS KIRK

Thomas Kirk was a botanist. He was raised by parents who worked in a nursery, and worked in a nursery himself until economic circumstances took him to Aotearoa in 1863. When he got here he began collecting native plants, and he exhibited a collection of ferns and other specimens in the New Zealand Exhibition, a world's fair in 1865.

In Auckland he became the city's meteorological observer, curator of the Auckland Institute's museum, and secretary of the Auckland Acclimatisation Society. He taught botany at the Auckland College and Grammar School, Wellington College, and Lincoln Agricultural College. He travelled all over Aotearoa on botanical expeditions, collecting samples and writing papers.

In 1884 he was hired by the government to report on the country's indigenous forests, and as a result of that work he became chief conservator of forests. He formed the forest and agriculture branch of the Crown Lands Department, drew up regulations to reduce the wasteful misuse of forests, and by 1888 had organised the allocation of 800,000 acres as forest reserves.

In 1889 he published 'The Forest Flora of New Zealand', which set out detailed descriptions and botanical illustrations of native plants, as well as providing information about their distribution, properties and uses.

DR JAMES ALLAN THOMPSON

After studying geology at Otago University, in 1904 James was New Zealand's first Rhodes Scholar. This gave him the opportunity to study at Oxford University, and following his study he became a lecturer in geology and petrology at Oxford.

James worked as a palaeontologist for the New Zealand geological survey before being appointed director of the Dominion Museum. During his time there he was responsible for putting in place improved curatorial and research policies. He became the first editor of the New Zealand Journal of Science and Technology in 1918. And in 1923 he worked with his father to publish a comprehensive review of scientific research in New Zealand, which made the case for a dedicated government agency to provide advice on science - which would become the Department of Scientific and Industrial Research a few years later.

His most important contributions to scientific research included formulating the principles that helped later scientists to develop a classification of Cretaceous and Cenozoic marine strata; coming up with a term, Notocene, which was used for many years to classify deposits formed between the Hokonui and Kaikōura mountain-building episodes; and publishing major works on Western Australian minerals and rocks, Antarctic volcanic rocks, and volcanoes of the New Zealand—Tonga volcanic zone.

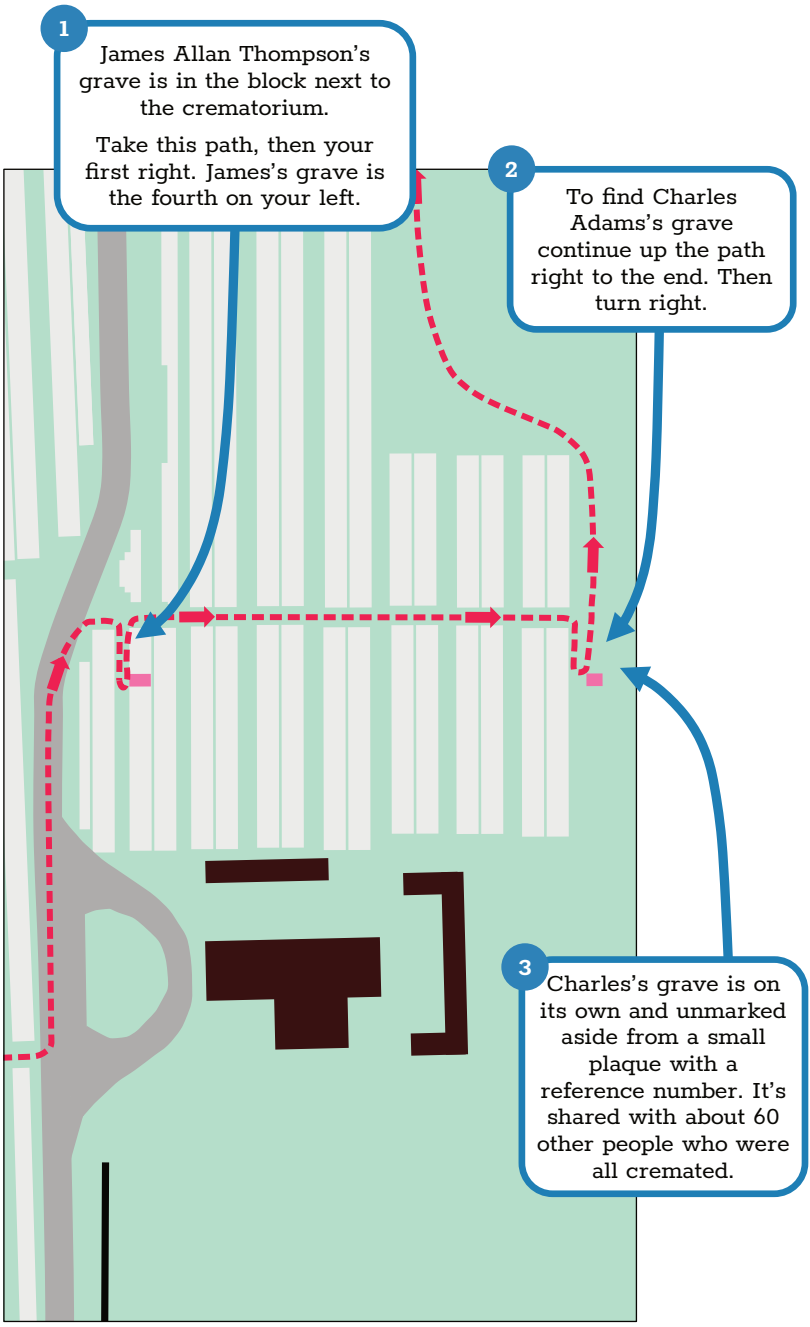
DR CHARLES EDWARD ADAMS

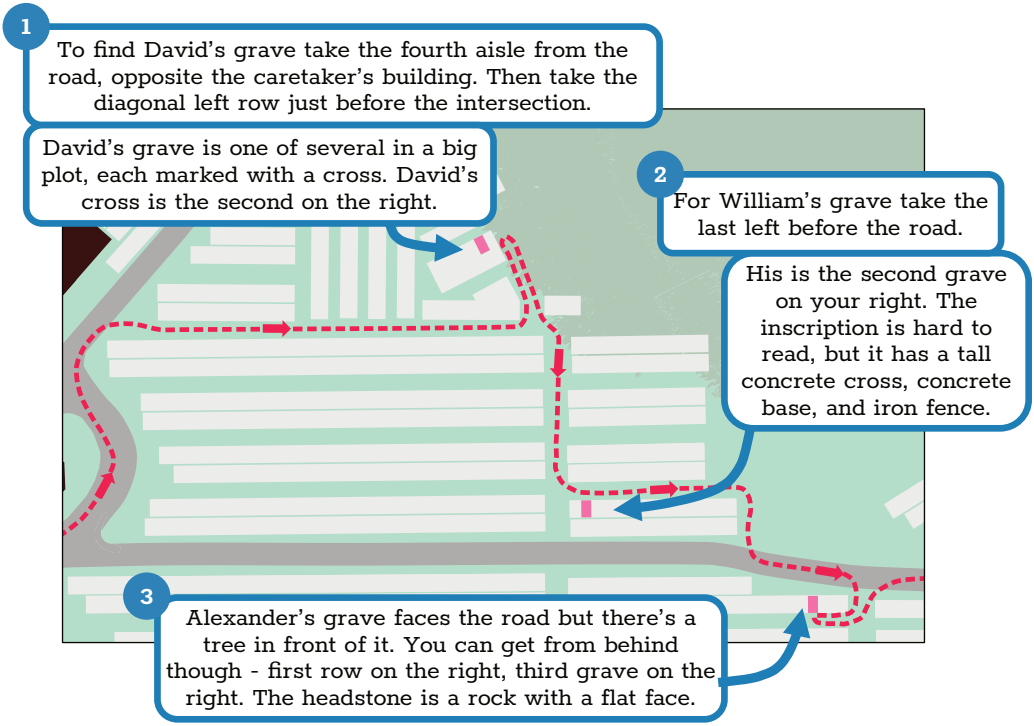
Charles was an astronomer and seismologist.

He was in charge of the Hector Observatory and was responsible for maintaining New Zealand's official record of the time and communicating it (by lights, and later by radio). He also became head seismologist for New Zealand, helping to develop the practice during a particularly seismically active period, documenting and studying earthquakes including the major one in Hawkes Bay in 1931.

He developed methods for working out the trajectories of planets and comets; and made observations of sunspots, variable stars, planets and auroras. He led eclipse-studying expeditions to Western Australia and Tonga. He pioneered the use of cinematography for astronomical timing, designed a camera for accurately gauging longitudes and lunar positions, and devised new techniques for predicting tides.

He was the founder and president of the New Zealand Astronomical Society, and He also helped establish the Carter Observatory (the one currently in use at the top of the Botanic Gardens).


1
James Allan Thompson's grave is in the block next to the crematorium.
Take this path, then your first right. James's grave is the fourth on your left.
2
To find Charles Adams's grave continue up the path right to the end. Then turn right.
3
Charles's grave is on its own and unmarked aside from a small plaque with a reference number. It's shared with about 60 other people who were all cremated.



DAVID KENNEDY

David was a priest, teacher, school principal and scientist. While teaching in Ireland in his early twenties he wrote a textbook called 'Natural philosophy for junior students' which was published in 1891 and covered scientific topics like mechanics, hydrostatics, pneumatics, gravity and motion.

Back in Aotearoa he taught in Hawkes Bay where he got into entomology and microscopic photography, gave public science lectures, and opened a meteorological station.

David used the proceeds from his text book to build an observatory. A few years later he sold the observatory and its equipment, and used those proceeds (alongside fundraising) to make a new observatory. It opened in 1907 and at the time was New Zealand's best equipped observatory, with a photo-visual refracting telescope and a spectroscope.

In 1910 he and two of his fellow seminarians took what were among the world's best photos of Halley's Comet, which were republished by NASA over 70 years later.

Unfortunately the observatory was destroyed in a storm two years later, and he never had the funds to rebuild it.

WILLIAM MILES MASKELL

William was a farmer with an interest in scale insects, a family of agricultural pest species. In 1887 he wrote a book about them called 'An Account of the Insects Noxious to Agriculture and Plants in New Zealand', which was a reference text for generations and is still in print today. He proposed over 330 scale insect species-group names from specimens from all Australia, the Pacific, Asia, Africa and the Americas, and by 1889 he was the world's foremost expert on scale insects.

He was also interested in microscopy, and used microscopes to a study scale insects' internal anatomy. Combined with his interest in biology and physiology, and his appreciation of the need to study both male and female insects at different stages of their life cycles, this put him ahead of his contemporaries and many of his successors.

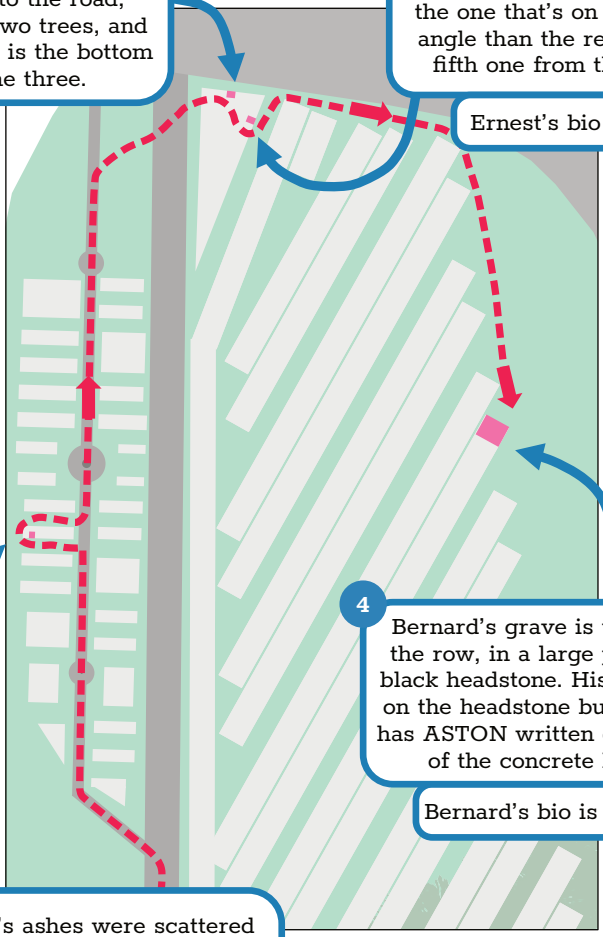
He experimented with pest control remedies and was an advocate of biological pest control. He helped the United States Department of Agriculture find specimens of the cardinal ladybird, which was taken to the US to use as a biological control agent for the cottony cushion scale to help save California's citrus industry.

ALEXANDER MCKAY

Alexander was a well-known and influential geologist. He got started in the field in the 1870s working for the Canterbury Provincial Geologist Julius von Haast (the guy who the town is named after) doing geological surveys, after spending several years travelling as a prospector and miner. He later became an officer in the Government Geology Survey, and later became Government Geologist.

He was not formally trained, and he made several controversial claims that conflicted with other leading figures at the time but were later proved correct. For example, from studying fence-post movement on the Hope Fault in Marlborough he challenged the prevailing theory that large horizontal movements along fault lines weren't possible; and he theorised that the uplift of mountains in Aotearoa had occurred much more recently than originally thought. He also got into a public fight with Haast by proposing, based on fossil evidence, that moa hunters were in fact Māori and not an earlier race of paleolithic people as Haast had proposed.

In the 1880s he also got into photography, experimenting with different camera designs and even making his own lenses from ground up bottles.



2 Plaques are laid out in a grid. Charles's plaque is on the very last column closest to the road, between two trees, and his plaque is the bottom of the three.

3 Ernest's plaque is in the top row, furthest from the path - the one that's on a different angle than the rest. It's the fifth one from the fence.

Ernest's bio is over the page.

4 Bernard's grave is the first in the row, in a large plot with a black headstone. His name isn't on the headstone but the grave has ASTON written on the front of the concrete border.

Bernard's bio is over the page.

1 Nancy's ashes were scattered in the 10th flower bed on your right, labelled 5N. There isn't a plaque for her, but her 'spot' in 27 from the path in an anticlockwise direction.

NANCY ADAMS

Nancy Adams was a botanist, botanical artist and museum curator.

She joined the science workforce in 1943 at the age of 16 as a technician in botany division of the Department of Scientific and Industrial Research, doing support work for the senior scientists researching seaweed.

Her observational and artistic skills got her appointed her as an illustrator and then a botanical artist doing all the illustrations for the botany department, before becoming the artist for the Dominion Museum. A large collection of her watercolours of plants and seaweed are held by Te Papa and are available online

In 1963, she released two important reference works, 'Plants of the New Zealand coast' (with Lucy Moore) and 'Trees and shrubs of New Zealand'. In 1964 she won the Loder Cup her drawings and illustrations for the Department of Conservation's National Park handbooks and pamphlets.

Nancy also contributed to the field of naming and classifying plants, and became Assistant Curator of botany at the museum. Her expertise in the handling, identification and study of seaweed, algae and moss, honed through observation, fieldwork and practice, led to her promotion to a scientist role.

SIR CHARLES COTTON

Charles was a geologist and geomorphologist.

1922 he published his first book, Geomorphology of New Zealand. This was internationally recognitised as an outstanding summary of the general principles and applications of the study of landforms. He also published

'Landscape as developed by the processes of normal erosion' in 1941, 'Climatic accidents in landscape-making' in 1942, and 'Volcanoes as landscape forms' in 1944.

Because of their clear illustrations, Cotton's books were widely used as geography textbooks. Several generations of students used his methods of observation and learnt to draw simple diagrams in his distinctive style.

Cotton expanded the ideas of geologist Alexander McKay about the uplift of mountains along fault lines; he realised that the South Island's Kaikōura ranges had been formed by the splitting and uplifting of blocks of the earth's crust.. Some of his students went on to identify the Alpine Fault.

Charles lectured at Victoria University, and in recognition of his scientific contribution one of its buildings is named after him.

SIR ERNEST MARSDEN

Ernest was one of Aotearoa's most well-known physicists. While studying under Sir Ernest Rutherford he and Hans Geiger conducted the 'gold foil experiment', one of the crucial experiments of twentieth century physics. It studied how alpha particles scatter, which contributed to Ernest Rutherford's theory of what atoms were made of.

During the Second World War Ernest was responsible for setting up New Zealand's radar programme; after being briefed on the new technology in Britain he decided that New Zealand should make its own equipment instead of waiting to be supplied with it by the UK, so brought the necessary technical information and components to start producing radar equipment here.

He initiated the search for uranium in New Zealand, and after the war he established a programme of nuclear science in relation to health, agriculture and industry. He almost managed to get an atomic energy research unit set up in New Zealand, but failed to get government backing for setting up a nuclear reactor. He studied radioactivity, including the effects of natural radioactivity on human health.

Ernest lectured at Victoria University and managed to get a physics wing set up there. He also worked in the Department of Education on improving science education, and was the first head of the Department of Scientific and Industrial Research when it was set up in 1926.

BERNARD CRACROFT ASTON

Bernard was an agricultural chemist with the Department of Agriculture, responsible for establishing laboratory facilities in the early twentieth century. Alongside this he did a range of practical work and was published widely in the New Zealand Journal of Agriculture. His projects included isolating tutin and other poisons from native plants, and analysing wheats, dairy products, animal feeds, grasses, soils, fertilisers and limestones.

Bernard spent years working as part of a team investigating the source of 'bush sickness' that was killing farm animals in central North Island, and was the first to figure out that the sickness was coming from a mineral deficiency, and that limonite lick-salts helped - although it wasn't till later that subsequent scientists figured out it was cobalt deficiency, not iron, that caused the illness. The attention his research gained led to the British Government giving an annual grant to the New Zealand Government for animal health science, which Bernard became responsible for administering.

He carried out studies of the distribution of native plants in the mountain ranges of the central North Island, and undertook ecological investigations of Campbell Island and the Auckland Islands, Turakirae Head and various parts of the South Island.

He also performed one of the earliest crossings of the southern Tararuas in 1909—10 and helping survey the Tararua tracks in 1911.